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10/582,584

05/25/2007

Noriyuki Suzuki

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01/22/2010

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EXAMINER

SALVITTI, MICHAEL A

ART UNIT

PAPER NUMBER

1796

NOTIFICATION DATE

DELIVERY MODE

01/22/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

|                              |  |                                      |  |
|------------------------------|--|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/582,584   | <b>Applicant(s)</b><br>SUZUKI ET AL. |  |
|                              | <b>Examiner</b><br>MICHAEL A. SALVITTI | <b>Art Unit</b><br>1796              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 2001/088035 to *Suzuki et al.* (for translational purposes English equivalent US 2004/0024139 A1 is being referenced, hereinafter referred to as *Suzuki '139*) in view of U.S. Patent No. 4,647,650 to *Sasaki et al.*

Regarding claims 1 and 2: *Suzuki '139* teaches a polyester resin composition comprising a polyalkylene terephthalate (polyethylene terephthalate, PET) and a layered compound (A-1 through A-6; see Table 3, ¶ [0144]).

*Suzuki '139* is silent regarding whether the acid value of the polyester resin utilized in making the composition is below 30 µeq/g. *Sasaki* teaches polyester resins having an acid value of 11 µeq/g (Examples 2-3 and 6 in Table). *Suzuki '139* and *Sasaki* are analogous art in that they are drawn to the same field of endeavor, namely synthesis of filled polyester resins suitable for molding applications. At the time of the invention, it would have been obvious to a person having ordinary skill in the art to use a polyester with a low acid value, as taught by *Sasaki* with the composition of *Suzuki '139*, with the motivation of obtaining a composition having a high intrinsic viscosity (*Sasaki*

col. 1, lines 60-65), stated to be preferable for forming molding compositions (*Sasaki* col. 1, lines 15-29).

Regarding claim 3: *Suzuki* '139 teaches the layered composition treated with a polyether compound (see abstract).

Regarding claim 5: *Suzuki* '139 teaches molded articles made from the composition ( $\text{¶}$  [0101]).

Claims 1-2 and 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,583,208 to *Suzuki* (hereinafter referred to as *Suzuki* '208) in view of U.S. Patent No. 4,647,650 to *Sasaki*.

Regarding claims 1 and 2: *Suzuki* '208 teaches a polyester resin composition comprising a polyalkylene terephthalate (PET and PBT; col. 21, lines 47-53) and a layered compound (phyllosilicate; col. 21, lines 25-35).

*Suzuki* '208 is silent as to whether the acid value of the polyester resins are below below 30  $\mu\text{eq/g}$ . *Sasaki* teaches polyester resins having an acid value of 11  $\mu\text{eq/g}$  (Examples 2-3 and 6 in Table). *Suzuki* '208 and *Sasaki* are analogous art in that they are drawn to the same field of endeavor, namely synthesis of filled polyester resins suitable for molding. At the time of the invention, it would have been obvious to a person having ordinary skill in the art to use a polyester with a low acid value, as taught by *Sasaki* with the composition of *Suzuki* '208, with the motivation of obtaining a composition having a high intrinsic viscosity (*Sasaki* col. 1, lines 60-65), which is preferable for forming molding compositions (*Sasaki* col. 1, lines 15-29).

Regarding claim 4: *Suzuki '208* teaches the layered compound treated with a silane (see abstract).

Regarding claim 5: *Suzuki '208* teaches molded articles made from the composition (col. 3, lines 15-16).

Regarding claims 6-8: *Suzuki '208* teaches a deflection temperature under load of greater than 150°C for all examples (Table 4).

*Suzuki '208* does not state the diffuse reflectance of the surface provided with an aluminum layer without primer. The applicant admits that polyester resin formed from a polyester having a low acid value and a layered compound has low diffuse reflectance characteristics (page 4, lines 19-25 of instant specification). Thus, the combination of *Suzuki '208* (teaching a polyester with a layered compound) and *Sasaki* (teaching a polyester having an acid value below 30) intrinsically been held to possess low diffuse reflectance characteristics despite the silence on this measurement. At the time of the invention, it would have been obvious to a person having ordinary skill in the art to combine *Suzuki '208* and *Sasaki*, with the motivation of creating a coating showing a diffuse reflectance of less than 2.0% and a diffuse reflectance upon 10 hours of heat treatment at 150°C of less than 3.0%

### ***Response to Arguments***

Applicant's arguments filed October 6<sup>th</sup>, 2009 have been fully considered but they are not persuasive. Art of reference relied upon below is the following:

- WO 2001/088035 to *Suzuki et al.* (US 2004/0024139 referenced; hereinafter *Suzuki '139*).
- U.S. Patent No. 4,647,650 to *Sasaki et al.* (hereinafter *Sasaki*)
- U.S. Patent No. 6,583,208 to *Suzuki et al.* (hereinafter *Suzuki '208*).

**A)** Applicant traverses the objection to claim 8 on grounds that the heat treatment further narrows the scope of claim 8.

In response, the objection to claim 8 has been removed.

**B)** Claims 6-8 have been amended to overcome issues of indefiniteness. The rejection of claims 6-8 under 35 U.S.C. 112, second paragraph has been withdrawn.

**C)** Applicant argues (pages 6-7) that the low acid value of the presently claimed invention leads to improved properties not recited by the prior art.

In response to applicant's arguments as to improvement in melt-processing, crystallization, shrinkage inhibition and surface gloss, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). *Sasaki* teaches that low acid value polymers produce high intrinsic viscosity polymers (*Sasaki* col. 3, lines 40-45); in turn these high intrinsic viscosity polymers have higher molecular weights (a high degree of polymerization; *Sasaki* col. 1, lines 19-21). These high molecular weight materials show utility in industrial applications (*Sasaki* col. 1, lines 15-20). The fact that higher molecular weight polymers show improvement in mechanical strength is known to a person having ordinary skill in the art. See *Odian*,

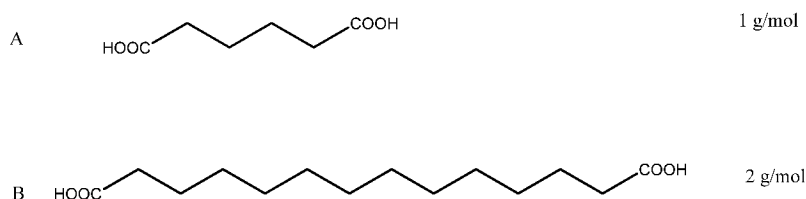
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Principles of Polymerization, page 19. A person having ordinary skill in the art, based on the references of record, would be motivated to have low acid value polyesters to obtain compositions of high mechanical strength; properties such as gloss, etc. argued by Applicant have not been claimed.

**D)** Applicant argues (page 8) that *Sasaki* teaches oligomers with an acid value of 11  $\mu\text{eq/g}$ .

In response, the oligomers of *Sasaki* do have an acid value of 11  $\mu\text{eq/g}$  (see e.g. Example 2 in Table, col. 3-4). By extension, the polyesters formed necessarily have an acid value below this amount, as these polymers are condensation products of linear monomers (terephthalic acid and ethylene glycol; col. 3, line 53).

To clarify this reasoning, consider the following drawing (not to scale/weight, merely demonstrative):



In the above drawing, fictitious polymer “A” with a molecular weight of 1 gram/mol has 2 equivalents of acid per gram. Fictitious polymer “B”, with a molecular weight double that of polymer “A”, has only 1 equivalent of acid per gram; by doubling the weight, the acid value is halved. Thus, it can be seen from common sense that higher molecular weight polymers have lower acid values in unbranched polymers (of which *Sasaki* is). By extension, the condensing oligomers of *Sasaki* must have an acid value below those of the oligomers, as they have a higher molecular weight.

**E)** In response to applicant's argument that the references fail to show certain features of applicant's invention (page 8, third paragraph), it is noted that the features upon which applicant relies (i.e., degradation upon melt processing) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

**F)** In response to Applicant's argument (page 8) that *Suzuki '139* or *Suzuki '208* does not teach an acid value of  $<30 \mu\text{eq/g}$ , for future consideration applicants should note that the polymers of the instant claimed invention (page 6, lines 3-27) appear to be substantially identical to those of *Suzuki '139* (¶ [0034]) and *Suzuki '208* (col. 18, lines 43-57), based on intrinsic viscosity, which is indicative of acid value and molecular weight, as taught by *Sasaki* (col. 1, lines 15-30).

### ***Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US 2003/0018099 to *Fujihira* teaches polyesters having a low acid value (¶ [0086]) containing layered silicates (¶ [0088]).
- U.S. Patent No. 4,501,829 to *Oda* teaches polyester resins with a filled with layered compounds (aluminum silicate; Example 5) having an acid value of 2-20 mg KOH/g.
- *Odian*. Principles of Polymerization, page 19. 2004 Wiley and Sons Inc.



### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL A. SALVITTI whose telephone number is (571)270-7341. The examiner can normally be reached on Monday-Thursday 8AM-7PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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